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BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Paper No. 26

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Filing Date: April 19, 1995
Appellant(s): Hummel

James G Watterson
For Appellant

EXAMINER'S ANSWER

This is in response to appellant's brief on appeal filed April 17, 1996.

(1) Status of Claims

The statement of the status of the claims contained in the brief is correct.

(2) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(3) Summary of Invention

The summary of invention contained in the brief is correct.

(4) Issues

The appellant's statement of the issues in the brief is correct.

(5) Grouping of Claims

The rejection of claims 1-3, 5, 6, 11, 12, 15-18, 25, 26, 35, and 36 stand or fall together because appellant's brief does not include a statement that this grouping of claims does not stand or fall together and reasons in support thereof. See 37 CFR 1.192(c)(7).

(6) Claims Appealed

The copy of the appealed claims contained in the Appendix to the brief is correct.

(7) Prior Art of Record

The following is a listing of the prior art of record relied upon in the rejection of claims under appeal.

4,912,781	Robins et al	4-1990
4,470,251	Bettcher	9-1984

(8) New Prior Art

No new prior art has been applied in this examiner's answer.

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. § 103 which forms the basis for all obviousness rejections set forth in this Office action:

> A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.
>
> Subject matter developed by another person, which qualifies as prior art only under subsection (f) or (g) of section 102 of this title, shall not preclude patentability under this section where the subject matter and the claimed invention were, at the time the invention was made, owned by the same person or subject to an obligation of assignment to the same person.

Claims 1-3, 5, 6, 11, 12, 15-18, 25, 26, 35 and 36 are rejected under 35 U.S.C. § 103 as being unpatentable over Bettcher '251 in view of Robins et al '781.

Bettcher '251 discloses a cut resistant yarn suitable for a machine knitting (col. 1, lines 7-8), comprising a core (10), a first wrapping (12) about the core (10) and a second wrapping (14) about the first wrapping (12). Bettcher '251 discloses the use of KEVLAR (col. 2, lines 54-63) for the core fiber component and the first wrapping layer.

Robins et al '781 disclose a cut resistant yarn for a machine knitting (col. 3, lines 47-56), comprising a core (1), a first wrapping (23) and a second wrapping (24) utilizing either KEVLAR or VECTRAN liquid crystal polymer fiber (claims 8 and 18).

It would have been obvious to one of ordinary skill in the art to exchange the Kevlar in both the core and the first layer in Bettcher '251 for VECTRAN liquid crystal polymer fiber in view of Robins et al '781 so that the yarn produced will have a greater cut or abrasion resistance as well as other property improvements such as flexibility and suppleness thereby providing a higher quality glove therefrom. Note that the liquid crystal polymer disclosed in Robins et al '781 would inherently possess the property of a tenacity which is no more than 10 grams per denier. If however, the liquid crystal such as VECTRAN does not inherently posses the property of having a tenacity of no greater than 10 grams per denier, it would have been obvious to utilize the type of VECTRAN M fiber which does have this property as a matter of engineering choice of materials having known properties depending upon the cost and properties desired in the final product produced from the yarn since VECTRAN M is less expensive than VECTRAN HS.

(10) New Ground of Rejection

This examiner's answer does not contain any new ground of rejection.

(11) Response to argument

a. Introduction

The appellant states in the introduction of the arguments (pages 5-6 of the brief) that Aramid (Kevlar) fiber, extended chains polyethylene (Spectra) fibers, and high strength liquid polymer (Vectran HS) fibers were recognized for their cut-resistant properties at the time of the present invention was made which exhibit high tenacity, about 20 or more grams per denier. The appellant states that low tenacity synthetic fibers, i.e., having a tenacity of no greater than 10 grams per denier, such as nylon, polyethylene and polyester (emphasis added), exhibited significantly lower cut-resistance and that the appellant has discovered a normal tenacity fiber under trademark Vectran M provides high cut -resistance comparable to that of high tenacity fibers and in many ways has other superior features to the Kevlar, Spectra, and Vectran HS. The appellant finally states:

> Appellant is not aware of, and the examiner has not cited, any disclosure or teaching by which the phenomenon of cut resistance may be predicted form physical chemical characteristics of synthetic fibers, although three synthetic fiber of high tenacity have exhibited cut resistance and no normal tenacity fibers have been cited as having high cut-resistance.

The examiner believes that Robins et al '781's claims 8 and 18 teach and suggest the use of fibers of normal tenacity in a cut resistant yarn. Claims 8 and 18 recite a "yarn selected from the group consisting of SPECTRA polyethylene, VECTRAN liquid crystal

polymer, KEVLAR aramid fiber, olefin, nylon or polyester" (emphasis added). First, Robins et al '781 acknowledges the VECTRAN fibers, though is silent on the tenacity of this fiber and which type of VECTRAN fiber it is M or HS, one of ordinary skill in the art at the time of the invention would have ability to see the complete VECTRAN product line and test each of the VECTRAN product in the cut resistant yarn for the desired characteristics. Second, in the uppermost underline section the appellant mention that low tenacity synthetic fibers, i.e., having a tenacity of no greater than 10 grams per denier include polyester which is final item in claims 8 and 18 in Robins et al '781. Therefore, it a examiner's position that these claims of Robins et al '781 teach and suggest the use of ow tenacity synthetic fibers, i.e., having a tenacity of no greater than 10 grams per denier in a cut resistant yarn.

c. Error in the Final Rejection

Next, the appellant argue (page 7 of brief) that examiner has erred that Robins et al '781 disclose the VECTRAN species VECTRAN M and that it would been obvious to substitute a normal strength fiber for a high strength fiber to achieve high cut resistance in Bettcher '251 yarn construction when nothing teaches or suggests that a normal strength fiber will achieve comparable cut resistance to high strength fibers. First, the appellant has provided no evidence that Robins et al '781 teaching of the use of a VECTRAN fiber is not a VECTRAN M fiber. The examiner agrees that Robins et al '781 prefers a high strength multifilament yarn (col. 3, line 24) but nowhere in the specification does it state in Robins et al '781 teaches only use of high strength filament and claims 8 and 18 disclose a polyester

fiber and as noted above the is a low tenacity fiber. Second, even if Robins et al '781 meant to use a VECTRAN HS as opposed to a VECTRAN M fiber would one skill in the art interpreting Robins et al '781 would look at all of VECTRAN fibers and experiment with each of them to obtain the desired results. Third, the examiner believes the combination is not in error because Robbins et al '781 disclose a cut resistant yarn utilizing either KEVLAR or VECTRAN liquid crystal polymer fibers therein. Thereby teaching the interchangeability of VECTRAN liquid crystal fiber for KEVLAR fibers in cut resistant yarns. It would have been obvious to one of ordinary skill in the art to exchange the KEVLAR in both the core and first layer in Bettcher '251 for VECTRAN liquid crystal polymer fibers in view of Robins et al '781 to achieve the want characteristic in the areas of strength, flexibility, suppleness, and cut-resistance.

e. The Deficiencies of the References in Supporting the Examiner's Rejection

The appellant argues (page 8 of the brief) that Robins et al '781 also fails to specifically disclose a liquid crystal polymer fiber having a tenacity of no more than 10 grams per denier. The appellant rehash the argument above that Robins et al '781 fail to teach VECTRAN of low strength tenacity. The appellant that admits (on page 8, lines 14-15) that Robins et al '781 teach a low tenacity fiber it is unclear how he could assume that VECTRAN is a high strength tenacity or how one of ordinary skill in the art could not choose a low tenacity fiber from the VECTRAN catalog when interpreting this reference (more specifically claims 8 and 18).

The appellant (page 9 of brief) that the generic term VECTRAN does not specifically disclose the normal strength species VECTRAN M and that the asserted obviousness of selecting the normal strength VECTRAN M species rather than the high strength VECTRAN HS species ignores the necessity of a motivation for substitution of a normal strength fiber for the high strength fiber of Bettcher '251. This goes to the argument that Robins et al '781 teaches the use of both high and low tenacity fibers in the cut resistant yarn and this teaching would be used to replace the KEVLAR in Bettcher '251. The argument that there is no motivation to combine the references, the Examiner recognizes that references cannot be arbitrarily combined and that there must be some reason why one skilled in the art would be motivated to make the proposed combination of primary and secondary references. In re Nomiya, 184 USPQ 607 (CCPA 1975). However, there is no requirement that a motivation to make the modification be expressly articulated. The test for combining references is what the combination of disclosures taken as a whole would suggest to one of ordinary skill in the art. In re McLaughlin, 170 USPQ 209 (CCPA 1971), references are evaluated by what they suggest to one versed in the art, rather than by their specific disclosures. In re Bozek, 163 USPQ 545 (CCPA) 1969. In this case, Robins et al '781 disclose the use of both high and low tenacity fibers in the cut resistant yarn would lead one of ordinary skill in the art to choose high or low tenacity due to test results and desired characteristics.

Next the appellant is arguing the issue of obvious to try (bottom of page 10 of the brie), the examiner is not contending it would be obvious to try the proposed modification.

The denigration of this rationale is recognized. See In re Antonie, 195 USPQ 6 (CCPA 1977). The examiner's position is rather that the invention would have been obvious to do (emphasis added). The differences here suggest making the proposed modification. In re Clinton, 188 USPQ 365 (CCPA 1976).

With respect to the declaration (page 10, lines 18-19 of the brief), the Second Supplemental Rule 132 declaration filed June 27, 1996, is unclear because there is no "third column in paragraph 7". Also the declaration was not persuasive because the following questions could not be answered. Were the core strands parallel and what were the twists per inch and in which direction were the covering layers wrapped about the core? How were the yarn average slash weights mathematically "adjusted up to 100 denier"? Whey were yarns having such different component deniers tested and then the results attempted to be some how extrapolated mathematically? Why not merely test multiple yarns representing examples of the present elected species and compare these results against identical tests performed on yarns formed identically as those against which they are compared against with the exception of exchanging VECTRAN HS in one sample and KEVLAR in the other with the same deniers, construction, twist direction and twists per inch? Were the fabrics which were tested constructed identically for each of the samples tested? If the yarns tested had different deniers, was the knit tighter than the comparison fabrics formed of the thicker yarns against which applicant tested them? Because of these unknowns and because yarns of such different

constituent and total deniers were different the results of the declaration under 37 CFR 1.132 is insufficient to overcome the above rejection advanced against the claims.

With respect to the prior office action, remarks (bottom of page 10 of the brief) drawn to the "Response to Amendment" will not be addressed because they made by the former examiner and not an issue.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

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